

**INTEGRATED WATER RESOURCES MANAGEMENT  
FOR BETTER WATER ALLOCATION IN THE  
PERAK RIVER BASIN**

**By**

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## ABSTRACT

The present and future land development activities will continue to have a considerable impact on the quality and intrinsic value of drainage basins and in particular the sustainability of the environmental resources. These could be seen in the Perak River Basin. Improper land use policies and incompatible development practices that take little account of the country's hydrology create adverse impacts on the affected ecosystems. In our effort to continuously protect our supply of clean freshwater resources and its allocation, aquatic life and natural habitats as well as highland forested catchments, a holistic and Integrated Water Resources Management (IWRM) must be promoted through binding policies. Appropriate IWRM tools need to be adopted in order to ensure the full functioning of a river basin. The basis of IWRM is that different uses of water are interdependent. Few IWRM tools are used for this purpose. Integration and public participation are the keys to IWRM. Many changes in policy, institutional roles and management approaches are necessary before we can see true adoption of IWRM. There are no one-size-fits-all blueprints and short cuts to implementing it. The most practical strategy to promote IWRM is to introduce it into the government system step-by-step, taking into consideration the political, social, and economic conditions in each country. This study looks into the IWRM tools that could be adopted in Perak River Basin and its possible implementation challenges. From that a conclusion is drawn to determine the status and further action required for IWRM implementation in Perak River Basin.

## ABSTRAK

Aktiviti-aktiviti pembangunan yang sedang giat dilaksanakan kini dan juga di masa hadapan akan terus memberikan kesan yang sangat besar terhadap kualiti dan nilai hakiki lembangan-lembangan sungai terutamanya dalam mengekalkan sumber-sumber air semulajadi. Perkara ini dapat dilihat di Lembangan Sungai Perak dimana polisi-polisi penggunaan tanah dan pembangunan yang tidak terancang dan tidak seimbang yang tidak mengambil kira keadaan hidrologi negara telah menghasilkan kesan-kesan yang buruk terhadap sistem-sistem ekologi terbabit. Dalam usaha kita untuk melindungi secara berterusan sumber bekalan air bersih dan juga peruntukannya, hidupan akuatik dan habitat-habitat semulajadi serta kawasan-kawasan tadahan berhutan di tanah tinggi, suatu tumpuan serta penekanan serius dan Pengurusan Sumber Air Bersepadu (PSAB) mestilah diperkenalkan melalui polisi-polisi yang ditetapkan.

Kaedah-kaedah PSAB yang bersesuaian perlu diadaptasi bagi memastikan keberkesanan peranan sesebuah lembangan sungai. Asas PSAB adalah penggunaan-penggunaan air yang berlainan adalah saling bergantung antara satu sama lain. Integrasi dan penglibatan awam adalah merupakan kunci bagi perlaksanaan PSAB. Beberapa kaedah PSAB diguna pakai bagi tujuan ini. Perubahan-perubahan di dalam polisi, peranan-peranan institusi dan kaedah pengurusan perlu dilakukan sebelum PSAB dapat diadaptasi dengan jayanya. Tiada sebarang rangka tindakan yang berkeseluruhan dan jalan pintas bagi melaksanakan PSAB. Strategi yang paling praktikal untuk menggalakkan PSAB adalah memperkenalkannya secara berperingkat ke dalam sistem kerajaan dengan mengambilkira keadaan politik, sosial dan ekonomi setiap negara berkenaan.

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## CHAPTER 1

### 1.0 INTRODUCTION

Located in the tropic, the Perak River are characteristically rich with plant and animal life. The beauty and the importance of the Perak River are attributed to the life they help to support and sustain. It helps stabilize the ecology of the area and provide livelihood and sustenance to communities along their banks.

Due to development, man has changed the face of the landscape from that of a river to four major lakes causing loss of flora and fauna diversity and affecting the downstream river flow. The regime of the river should not continue to be controlled in the current manner because Perak River needs adequate flow of water to support functioning of the ecosystem and to provide benefits to the communities downstream. For the lower riverine stretch, the river has been neglected and degraded due to reduced flow of water caused by the upstream dams together with heavy sedimentation, erosion and pollution. Most of the waterway cannot be used for transportation. Due to the high contribution and potential of the Perak River, there is a need for a sustainable management along the river basin in order to achieve a better protection to the environmental condition and to also achieve better water allocation to the users. Rapid urbanization in the Perak River has resulted in many environmental problems and conflicting interest of water users. This has created uncertainties in the basin capacity to sustain further development of its natural resources. There is a need to consider the interactions between natural systems and human activities and concentrate upon the opportunities to establish well integrated sustainable environment, balancing the interest of man kind and nature. This has led to significant changes in the way natural resources in the basin are managed and developed.

The way forward is to adopt integrated approach towards managing the rivers and natural resources of the Perak River basin. A holistic and Integrated Water Resources Management (IWRM) must be promoted through binding policies. The basis of IWRM is that different uses of water are interdependent. Many changes in policy, institutional roles and management approaches are necessary before we can see true adoption of IWRM. In this project paper, a few IWRM tools are being proposed to study the IWRM attempt in the Perak River Basin. Besides that, it looks into the possible implementation challenges and barriers. From that, a conclusion will be drawn to decide the status and further action required for the IWRM implementation in Perak River Basin.



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